

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

NEW PLANTS FROM NEVADA.

BY AVEN NELSON.

For two or three years past, Mr. F. Beveridge Kennedy, Professor of Botany, Nevada State University, has been very industriously studying the flora of his state. While his attention has been given to its economic aspects in particular, yet the herbarium he is building up must add much to our knowledge of its species. He has very kindly permitted me, from time to time, to study many of these collections. Among the choice things secured there are several numbers that seem to be novelties. Following are the diagnoses as I make out them out. Unless otherwise stated the types are deposited in the Rocky Mountain Herbarium.

***Arabis pedicellata* sp. nov.**

Perennial from a thick woody or sub-fleshy root; the base of the stem also persisting as a caudex; caudex thick (1-2 cm.), leafless but rough with the dense covering of the dead persistent petioles, in length from a mere crown to nearly 1 dm. (according to the age of the plant); stems one or more from the crown, lightly pubescent or nearly glabrous above, stem proper or leaf-bearing portion but slightly surpassing the crown-leaves; leaves canescent with a dense indument of soft stellately branched hairs; those of the crown large and numerous, narrowly oblong or oblanceolate, obtuse or subacute, often 1 dm. long, tapering into a much

shorter somewhat margined petiole; those of the stems small, oblong-lanceolate, 2-3 cm. long, sessile by an auricled base; inflorescence naked, at length very open, 10-15 cm. long; pedicels spreading, at length at right angles to the rachis, becoming 3 dm. or more in length; pods similarly spreading, as long as the pedicels, tapering into a beak-like style one fourth as long as the pod, sessile on an enlarged receptacle, flattened parallel to the partition, faintly 1-nerved; sepals oblong, erect, greenish with scarious pink margins, half as long as the petals, the lateral pair noticeably spurred at base, the other pair only slightly gibbous; petals purple, broadly spatulate, with nearly flat blade and cuneately tapered to a short narrow claw; stamens free; stigma small, circular; seeds immature.

The generic position of the plant seems somewhat doubtful. I call it an *Arabis* because of its duration, its branched pubescence, its gibbous sepals, its nearly flat broad petals, its flat 1-nerved pods. But some of these characters are also ascribed to some of the species of *Streptanthus*. In fact this plant has somewhat the appearance of a *Streptanthus* especially in its beaked pods, sessile on an enlarged receptacle. In this respect it reminds one of *S. longirostris* Wats., but one may well question if that species were not better left in *Arabis* where Dr. Watson originally placed it. However, if that species remains a *Streptanthus*, it is possible that the species here described must become *Streptanthus pedicellatus*.

Founded upon Kennedy & True's No. 705, Hunter Creek Canyon (near Reno, Nev.), May 16, 1903.

***Viola senecta* sp. nov.**

Grizzly-white, with rather long, dense, tangled-hirsute pubescence; stems short, slender, from a thickened branched root; leaves ovate, subacute, more or less irregularly toothed, 1-3 cm. long, abruptly or cuneately tapering into the rather long slender nearly glabrous petiole; stipules scarious, mostly entire, linear-lanceolate, somewhat ciliate-pubescent; scapes shorter than the leaves; sepals lanceolate, about 5 mm. long, sparsely ciliate; petals yellow, glabrous, obovate-spatulate, 7-8 mm. long; the lower a little longer, with orbicular blade, abruptly inflexed at base, enclosing two anthers, scarcely at all spurred; connective of anthers produced into a greenish ovate appendage.

This is probably *V. premorsa* in so far as Nevada specimens cited in literature are concerned. It seems to have characters that demand its separation. The type was collected by Prof. F. H. Hillman, "near Peterson's Ranch", Nev., April 20, 1895,

***Mirabilis glutinosa* sp. nov.**

Stems several from a branched woody caudex, 2-4 dm. high, more or less branched from the base up, somewhat pubescent especially above,

the hairs flattened or crinkled and more or less glandular-glutinous; leaves reniform, orbicular or broadly ovate-cordate, obtuse at apex and mostly broadly rounded, 1-3 cm. long, short petioled or the uppermost nearly sessile; involucre campanulate, 5-lobed, 1-flowered, short-peduncled (3-12 mm.); its lobes short-ovate, subacute; pubescence of leaves and flowers similar to that of the stems and peduncles; perianth white, campanulate-funnelform, 10-12 mm. long, its very broad segments cleft into two equal oval lobes; fruit fig-shaped, glabrous, somewhat striate.

This species has usually been considered only a form of *M. californica* Gray. Dr. Coville in his Report upon the Death Valley Expedition (Contrib. Nat. Herb., 4:177) points out the fact that there are two forms which may be distinct. It seems quite probable there are three forms, as there seems to be no good reason for asserting that *M. lewis* (Benth) and *M. californica* are the same. The former came from "Magdalena Bay" and was described as glabrous and as having very unequal involucre bracts. This may well be different from *M. californica* in spite of the fact that it apparently has escaped subsequent collection. It may have happened, too, that the locality at which "H. M. Ship Sulphur" secured the specimens is incorrectly given, as has often happened when large quantities of material are secured in an important expedition.

As to the distinctness of *M. californica* and the species now proposed there can be no question. *M. glutinosa* may at once be known by its subspherical obtuse leaves, its short rather obtuse involucre lobes, and its white flowers. Apparently very few of the flowers ever open but are self-fertilized in the bud. On close examination of the involucre and perianth attention is attracted to the large number of acicular hairs or lines (raphides) in the epidermis both on the outside and inside of these structures.

I take as the type L. N. Goodding's No. 967, from Karshaw, Meadow Valley Wash, Nev., May 27, 1902. Wholly typical are the following: Goodding, No. 778, St. George, Utah; G. H. True, No. 758, Pyramid Lake, Washoe Co., Nev.

***Sidalcea crenulata* sp. nov.**

Perennial from a thick woody root; stems few to several from the crown, nearly simple, more or less decumbent, 3-5 dm. high, green and seemingly glabrous but with some small scattered simple or forked hairs; leaves sparsely appressed pubescent, the hairs simple or forked; the radical orbicular, 2-5 cm. broad, crenulately toothed, the teeth somewhat paired, on petioles 3-5 times as long as the blade; stem leaves more deeply cleft and the uppermost parted into linear divisions; stipules linear, 7-10 mm. long, subglabrous as are also the petioles; raceme slender and at length open; the rachis green, granular-glandular; bracts linear, paired, 5-8 mm. long, pedicels at length equalling the calyx; calyx cleft nearly to the base into lanceolate segments, about 6 mm. long, minutely glandular-pubescent and with occasional longer forked

hairs; petals orbicular, emarginate and slightly erose-dentate, 12-15 mm. long, with a short claw; staminal column rather short; styles not surpassing the anthers; carpels smooth, easily splitting along the dorsal line, deeply notched but not lacerate on the ventral side.

Rather too nearly allied to *S. neo-mexicana* Gray but easily distinguished from it. *S. neo-mexicana* may always be known by its almost hispid hirsuteness which is especially noticeable on the stems, petioles, leaf-veins and calyx. The typical form of this species too is mostly much larger, and often with a single stem from a conical root. It also has a longer staminal column from which the styles are noticeably exerted.

Mr. Goodding's No. 1091, Juab, Utah, June 10, 1902, is taken as the type. Nearly typical are the following by Prof. Kennedy; No. 673, Simon's Creek, Elko Co., Nev., and No. 811, Stampede, same county.

***Sidalcea nervata* sp. nov.**

Perennial; stems singly from the small woody root, usually somewhat branched above, glabrous below, sparsely and minutely stellate-pubescent above; leaves apparently glabrous but with short forked hairs above and a minute stellate pubescence below, strongly nervosely veined below; the basal long-petioled, orbicular, 6-8 cm. broad, 6-8 lobed, the lobes with 2-3 broad teeth; becoming more deeply divided upwards, the uppermost cleft to the base into linear lobes; stipules narrowly linear; inflorescence densely stellate-pubescent, rather few-flowered; calyx cleft below the middle, the lobes triangular-lanceolate; petals broadly obovate, emarginate, about 2 cm. long, half as broad, pubescent on the short united claws; carpels glabrous, distinctly rugose-reticulated on the dorsal angles, slightly depressed.

A perfectly distinct species allied to *S. oregana* Gray from which its relatively few, much larger flowers will at once distinguish it. It may also be distinguished by its smaller calyx, less acuminate calyx-lobes, short pedicels which are distinctly exceeded by the slender bracts. The inflorescence never presents that crowded spicate appearance of *S. oregana* with its numerous small flowers.

I take as the type my No. 4101, Evanston, Wyo., distributed some years since as *S. oregana*. What seems to be the same is Prof. Kennedy's No. 564, Little Lakes Canyon, Elko Co., Nevada. Somewhat more pubescent and probably showing its variation and distribution are Mr. M. E. Jones's Nos. as follows; 5597, Soldier Summit, Utah, distributed as *S. glaucescens*; 6207, Salubria, Idaho, distributed as *S. campestris*.

***Sphæralcea parvifolia* sp. nov.**

Stems several or many from a rather large woody root, erect, rather slender, only 2-4 dm. high, at first densely stellate-canescens but gradu-

ally denuded and becoming bright green with only scattered stellate hairs; leaves small, suborbicular with truncate or subcordate base, 1-2 cm. broad, irregularly crenulate, scarcely lobed, rather thick and slightly rugose, densely stellate-canescens, ultimately more or less denuded and greenish above; the thyrsoïd raceme seemingly nearly naked, but the (3-flowered) clusters axillary to the reduced leaves which above are mere bracts; pedicels slender, variable, often longer than the calyx, densely stellate-pubescent as is also the calyx and fruit; calyx about 6 mm. long, cleft below the middle, its lobes triangular-lanceolate; petals rhomboid-obovate, inequilateral with oblique summit, scarcely emarginate, about 12 mm. long; fruit slightly depressed, white with the dense pubescence, only 5 mm. broad and not so high; carpels wholly muticous, the back and rounded dorsal angles subcartilaginous and the sides altogether smooth and membranous, 2-ovuled and often 2-seeded.

This was recently distributed as *S. ambigua* but without any justification it would seem. It is altogether a much smaller plant in every way and the smooth-sided carpels would take it quite out of that section of Gray's revision (Proc. Am. Acad., 22:292) and of the revision as extended by Dr. Robinson in Syn. Fl. 1¹:315. For equally good reasons it cannot well go into the section with *S. Emoryi* with which it also has some affinities.

Collected by L. N. Goodding at Calientis, Nevada, May 22, 1902, No. 916.

Sphærostigma tortuosa sp. nov.

Perennial from the enlarged crowns of slender rhizomes; stems usually several from the crown, spreading or erect, glabrous, somewhat striate, 1 dm. (more or less) in length, the longer ones inclined to be naked near the base; leaves entire, glabrous, narrowly oblong or linear-oblancoleate, 1-3 cm. long, tapering into a slender petiole about as long as the blade, numerous on the crowns and in the lower portion of the inflorescence; flowers numerous, crowded at the summit of the gradually elongating raceme, usually also some among the crown leaves; calyx tube obconic, about 4 mm. long, equalled by the lanceolate reflexed segments; petals white, broadly obovate, as long as the calyx-lobes; stamens subequal, with oblong anthers, about as long as the petals and the slender style; stigma small, capitate; capsule linear, 1 cm. or more in length, angled with rounded cartilaginous ribs, strikingly contorted and entangled in the leafy raceme and among the leaves of the crown; seeds oblong, obtuse at apex and pointed at base.

This fine species was collected by Prof. P. B. Kennedy at Truckee Pass, Virginia Mts., Washoe Co., Nevada, June 16, 1902.

Phacelia monosperma sp. nov.

Biennial; stem simple, erect, rather stout, 3-4 dm. high, appressed-

puberulent with some longer scattered hairs; leaves pinnatifid or those above nearly entire, oblong in outline, petioled, with short matted pubescence and some longer scattered white hairs; inflorescence of nearly straight, slightly divergent secund spikes, softly hispid, and giving the whole plant the appearance of certain *Asperifoliae*; sepals similar, linear-oblong, in fruit 5-7 mm. long, hispid-ciliate; corolla campanulate, barely as long as the sepals, its rounded lobes shorter than its tube, color in doubt, appendages narrow, somewhat united at the base of the filament; stamens well exerted, the filaments sparsely long-bearded on the exerted portion; the very slender style cleft to the middle; capsule ovate, pointed, somewhat compressed, included; seed solitary (only one maturing), conical-oblong, brown, beautifully reticulate-pitted, 2-3 mm. long, slightly carinate ventrally.

In its solitary seed it resembles *P. platyloba* Gray, which is a somewhat viscid heterosepalous annual; in its pubescence and some other characters *P. hispida* Gray which is a diffusely branched annual.

The type was collected by Prof. F. H. Hillman, June 30, 1893, on Alum Creek in the Sierra foothills.

***Mertensia nevadensis* sp. nov.**

Perfectly glabrous throughout; roots large and ragged, the crown clothed with the brown dead bases of the leafstalks of former years; stems 1-2 dm. high, slender, simple; crown leaves numerous, large for the plant, oblong, obtuse or subacute, 6-8 cm. long, 1-2 cm. broad, on slender petioles nearly as long as the blade; stem leaves smaller, becoming sessile and lanceolate above; inflorescence terminal, crowded; the short pedicels slender; calyx about 4 mm. long, its entire lanceolate segments about 3 mm. long; corolla tubular, its limb but slightly dilated, about 15 mm. long (tube 9 mm.; throat 4 mm.; the obtuse rounded lobes only 2 mm.); stamens equal, inserted on the margin of the throat; the filaments broader than the anthers and about as long; throat-crests conspicuous, tipped with brown, broad and noticeably saccate; corolla tube glabrous within but at the base a ring of 10 very minute paired nectariferous pits, one pair on each of the 10 principal nerves of the tube; style about equalling the stamens.

The only species that this seems comparable with is *M. oblongifolia* Don. but to this it only bears some resemblance in its floral characters. It differs from that species in its large elongated root; its larger (not succulent) leaves; its fewer-flowered more open inflorescence.

Type collected by Messrs. Kennedy and True (No. 711) who report it as common in Hunter Creek Canyon, near Reno, Nevada, May 16, 1903.

***Pentstemon violaceus* (Brand) Nelson.**

(Obscurely puberulent throughout; stems several from the scarcely

woody branched crown, 1-2 dm. high; leaves oblong or oblanceolate, 2-3 cm. long; the upper sessile, the lower tapering into a slender petiole; thyrus narrow, obscurely glandular or viscid; calyx short, not more than 2-3 mm. long; the sepals broadly oval or obovate, obtuse but sometimes with a small apiculation; corolla 12-15 mm. long, moderately and gradually dilated, the limb very short and but slightly 2-lipped, its lobes obtuse; anthers horse-shoe shaped, the lower half of the cells remaining closed and saccate, minutely denticulate-ciliate on the margins of the dehiscence; the sterile filament glabrous and not dilated.

Most nearly allied to *P. Roezli* Regel but with broader leaves, narrower inflorescence (not at all paniculate) and very different sepals and corolla. This is very probably *Pentstemon Roezli violaceus* T. S. Brand. I therefore use his varietal name and give the additional description as above.

Secured by Prof. Kennedy at Newcomb Lake, June 8, 1901, No. 15.

***Pentstemon Kennedyi* sp. nov.**

Perennial from a somewhat woody branched root-like caudex, glabrous and inclining to glaucous, 2-4 dm. high; stems mostly simple and singly from the crowns, erect; leaves narrowly oblong or lanceolate; the basal tapering gradually into a slender petiole; the mid-stem sessile by the narrowed base; the upper becoming linear and bract-like; inflorescence narrow; calyx about 1 cm. long; sepals lanceolate, scarious-margined below, the somewhat acuminate upper half tinged with purple; corolla about 3 cm. long, somewhat ventricose, violet-blue (possibly varying to purple); anthers glabrous, dehiscent from base to apex but not confluent, slightly if at all divaricate; sterile filament glabrous and but slightly dilated.

This is one more segregate from the *P. glaber* group, Difficult as it is to say what are valid specific characters, it becomes almost necessary to designate as distinct those forms which the collector and the amateur refuse to unite. On the other hand it seems like folly, in most cases at least, to separate forms upon details which require the compound microscope for detection. A difference that is reasonably constant and sufficiently characteristic to attract the attention of a trained observer in the field cannot well be ignored. Usually, as in this case, less obvious details will be found to confirm the field impressions. In separating this form from *P. glaber* Pursh, it may tend to clearness to recall the following characters of the latter:

Leaves oblong-lanceolate below to ovate-lanceolate above; sepals short, not more than one-sixth as long as the corolla, orbicular-ovate, mostly abruptly short-acuminate, noticeably erose on the scarious sides; anthers more or less short-hirsute; the cells becoming divaricate or explanate; sterile filament dilated, usually somewhat emarginate, stiffly short hirsute near the apex.

The excellent specimens that are taken as the type (No. 736) were collected by Prof. Kennedy at Truckee Pass, Virginia Mts., Washoe Co., Nevada, June 6, 1903.

Lagophylla Hillmani sp. nov.

Annual, about 2 dm. high; stems slender, erect, simple or with a few slender ascending or erect branches, sometimes branched from the base, obscurely granular-glandular pubescent with a few scattered long white hairs; leaves linear, thinly strigose and minutely scabrous; heads terminating naked peduncles, rather large for the genus, 6-8 mm. high; involucre strigose-hispid, some of the hairs tipped with black glands as are also some of those on the peduncles; rays 5-6, light-yellow (?), the ligule broadly oblong, 5-7 mm. long, cleft nearly to the middle into oblong obtuse lobes; disk flowers about 25, apparently all sterile; akene narrowly oblong-obovate, closely enwrapped by the scarious, ciliate-pubescent inflexed base of the involucre bracts, the upper half of which is plane and narrowly lanceolate; bracts between the ray and disk not numerous.

Not very closely allied to any species known to the writer. In aspect intermediate between *Lagophylla* and *Layia* but by reason of the rays, the complete absence of pappus and the abortive disk achenes will have to be considered a species of *Lagophylla*.

Collected by F. H. Hillman, between Truckee and Lake Tahoe, Sept., 1894.